



### **B172 Postmortem Root Banding of Hairs: Their Microscopic Appearance and the Continued Importance of Hair Evidence**

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The goal of this presentation is to provide microscopists with reliable information as to what postmortem root banding looks like, when it starts to appear on hairs and under what weather conditions. In addition, this presentation will show that the use of microscopical examination of hairs can provide valuable evidence and investigative leads beyond the comparisons that have come under such scrutiny in recent years and should therefore not be eliminated from a laboratory.

This study will impact the forensic community by providing guidance on what post mortem root banding looks like at various stages. Learning the stages of decomposition in hairs and what can legitimately be stated versus what qualifying factors should be acknowledged will lead to a greater understanding of conclusions of degradation versus decomposition.

Microscopic examinations of hair have shown that not only are well trained microscopists able to differentiate hairs between individuals, but they are able to provide lead value to investigators as well as substantive information as to whether or not a hair is consistent with the hairs in a known sample collected from a victim or suspect. Whether a hair has been forcibly removed or naturally shed, if the hair is artificially treated and if there are any indications that a hair could have come from a decomposing body through the presence of the postmortem root band is all valuable information that may add value to evidence or corroborate other evidence in court. This study was an attempt to provide information to hair microscopists as to when the post mortem root banding starts to appear on human hairs. The microscopical examinations were done in the FBI Laboratory from samples collected by graduate students in the Anthropology Department at the University of Tennessee. Hairs were collected daily from bodies donated to the Forensic Anthropology Facility from five different areas of the head over a period of several months. Information such as the temperature, cloud cover, precipitation, and wind were recorded daily along with the basic information as to age, sex and ancestry.

Attendees will learn what the stages of the postmortem root banding look like, when it starts appearing, when a majority of the hair samples have the banding pattern and what impact factors such as weather and body placement may have on development of the postmortem root banding.

#### **Hairs, Postmortem, Root Banding**